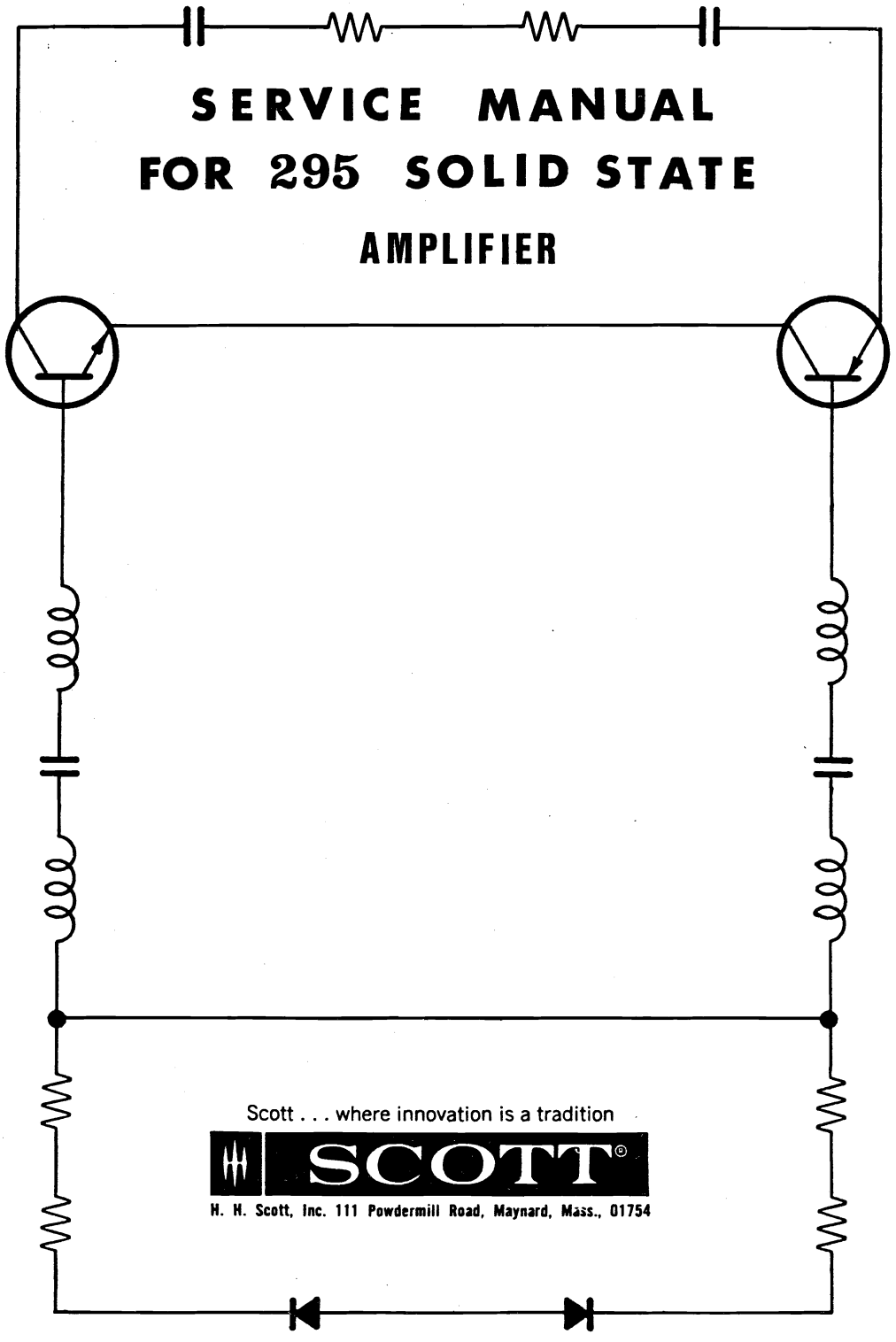
Price $1.00

SERVICE MANUAL FOR 295 SOLID STATE AMPLIFIER



Scott . . . where innovation is a tradition

SCOTT®

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029-1175-021

AUDIO SECTION

Equipment Needed	Set Controls to the Following:	
Audio Oscillator	Sp-2	OFF
VTVM	Input Selector	Extra-2
Oscilloscope	Stereo Switch	Stereo
Triplett VOM or equivalent	Tone Controls	Flat "0"
8 ohm load	Loudness-A.C.	Full CCW
Attenuator	Vol. Comp.	Loud
Distortion Meter	Sp-1	ON
117 V. Source	Balance Pot.	Flat "0"

Preliminary Visual Inspection and Continuity Checks

Inspect unit for defects such as broken wafers, loose stand-up resistors, cracked terminals and jacks, and other such defects. See transistor precaution list. Turn bias max. ccw.

1. Offset, Bias and Voltage Checks

Turn unit on. Watch carefully for any signs of voltage shorts. Check main supplies for +27 volts and -27 volts. At the emitter of the QP-11 on the power supply bracket, check for 12VDC.
Bias measurements have to be taken with triplet meter directly across either 82 ohm resistor on driver board. With both leads on either resistor adjust Bias pot (pot nearest rear panel) for .6MA (12 MA scale).
Offset voltage will be measured between either channels output terminal and ground, for 0 volts $\pm$ 100 millivolts.

2. Sensitivity Check

Input selector to extra-1 at .40 (+2 db) input. Connect 8 ohm load to Sp-1 jacks. Turn loudness pot to max., observe output of 24.5 watts (14 V). Check tape output jack with troubleshooting lead for same input signal as above.

3. Distortion Check

At 14 V output max. distortion 0.6%.

3a. Balance Pot

With input and output connected to left channel, note loss of 0 db when pot is rotated to "L" position. When pot is rotated to "R", note a 45 db drop in output. With input and output in the right channel, pot rotation to "R" will indicate no drop in output, and in "L" position a 45 db drop will occur.

4. Tape Monitor Switch Check

Audio Osc. to EXTRA at .4V input to "L" channel. Note output at left channel speaker terminal. Put tape monitor switch in the IN position. Note loss of output. Connect jumper cable from "L" channel to tape OUT to "L" channel tape IN. Note restoration of signal out. Repeat process for "R" channel, then return tape monitor switch to OUT position.

5. Speaker Switch & Phone Jack Check

Sp-1 switch to OFF position. Note complete loss of signal. Loudness to min. Insert phone plug to phone jack, remove speaker leads and connect to phone plug leads. Loudness to max. Note drop of 26 + 2 db. Switch #1 speakers in. Note restoration of signal. 8 ohm load to speaker #2 jacks. Speaker #1 switch OFF, speaker #2 switch ON, note same output as #1 speakers. With speaker #1 and speaker #2 switches ON, note drop in output of 1 to 2 db. Return speaker switch to Speaker #1 ON and speaker #2 OFF and load to speaker #1 jacks.

6. Loudness Volume Check

Loudness Vol. Sw. to LOUD pos. Loudness pot to 4 flat pos., osc. to 1 KHz. Take ref. Osc. to 100 Hz. Note rise of 7 ± 2 db. Switch osc. to 10 KHz. Note change of 0 ± 2 db. Loudness vol. sw. to VOL. pos., osc. to 1 KHz. Take ref. At 100 Hz and 10 KHz 0 ± 2 db from original ref. Loudness pot to max., osc. at 1 KHz, output 14 V. Loudness pot to min. Note drop of 70 db. Loudness pot to max.

7. Tracking Check

In 10 db steps check tracking of L & R channels. Output may be no more than 3 db between channels down to 40 db down.

8. Crosstalk and Stereo Switch Check

At 1 KHz loudness pot to max, output to 14 V, mono-stereo switch to STEREO. Remove input and place in opposite channel, output from opposite channel should be down 45 db. Return controls to previous settings and attenuate to 0 db on 1 V. range.

9. Tone Control Check (0 db 1 V Range)

Bass 100 Hz	Treble 10 KHz
Boost - 10 db ± 2 db	Boost - 10 db ± 2 db
Cut - 10 db ± 2 db	Cut - 10 db ± 2 db

10. Frequency Response Check (Approx. 1 watt level)

Osc. 0 db 1 KHz reference on 1 V range. Sweep osc. from 35 Hz to 20 KHz, note maximum variation of +2 db. 3 db down point 20 Hz or lower
3 db down point 25-35 KHz

11. Regulation Check

At 1 KHz 0 db 1 V range remove 8 ohm load switch. Output rise of 1 db max.

12. Preamp Gain Check @ 1 KHz

Attenuate input 42 db, input leads to phono. Output 0 db 1 V range ± 1 db Stereo mono switch to MONO, note drop of 6 db in output. Stereo mono switch to STEREO.

13. Preamp Frequency Response Check

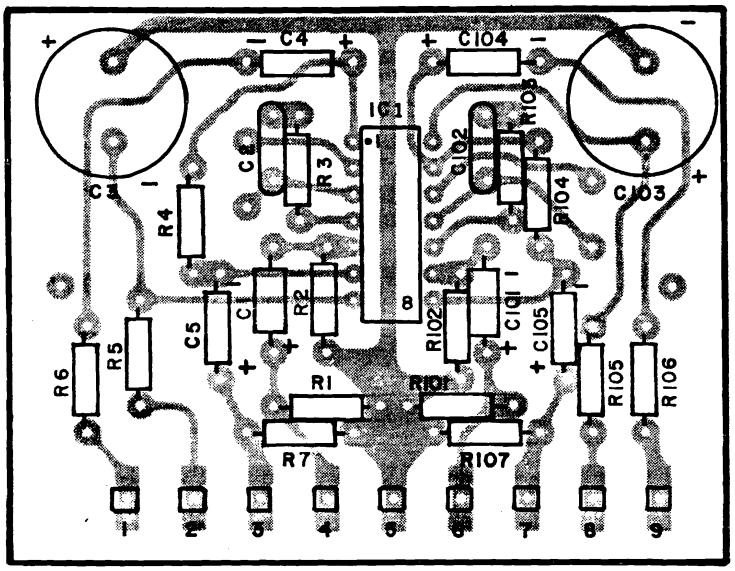
1 KHz	0 db (ref)
10 KHz	-13 ± 2 db
100 KHz	+13 ± 2 db

14. Hum Checks (input shorted)

Position	Loudness Pot	Max Hum
Extra	0	5 mV
Extra	10	5 mV
Phono	10	30 mV

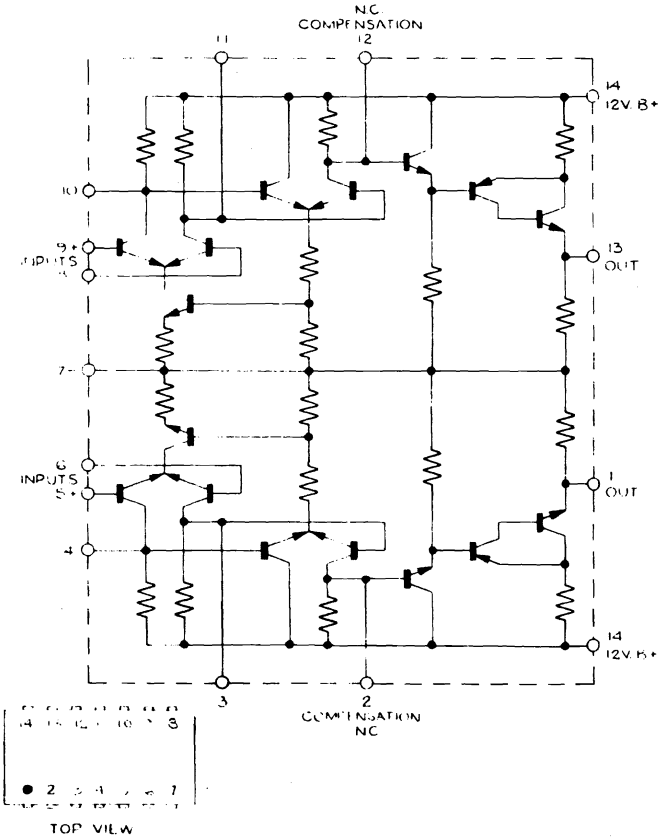
15. Repeat steps 2 through 15 for "R" channel.

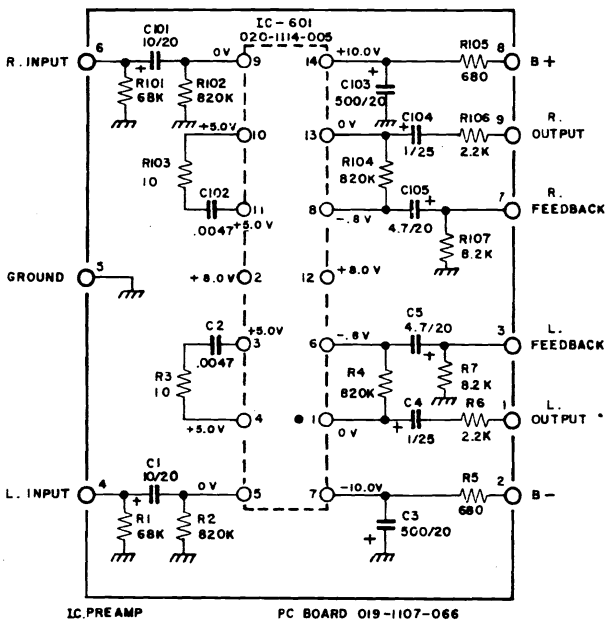
TONE CONTROL, PRE AMP



PRE AMP

NOTE: 1. CIRCLE MARK ON TOP OR INDENTATION ON LEG OF IC INDICATES PIN NO.1

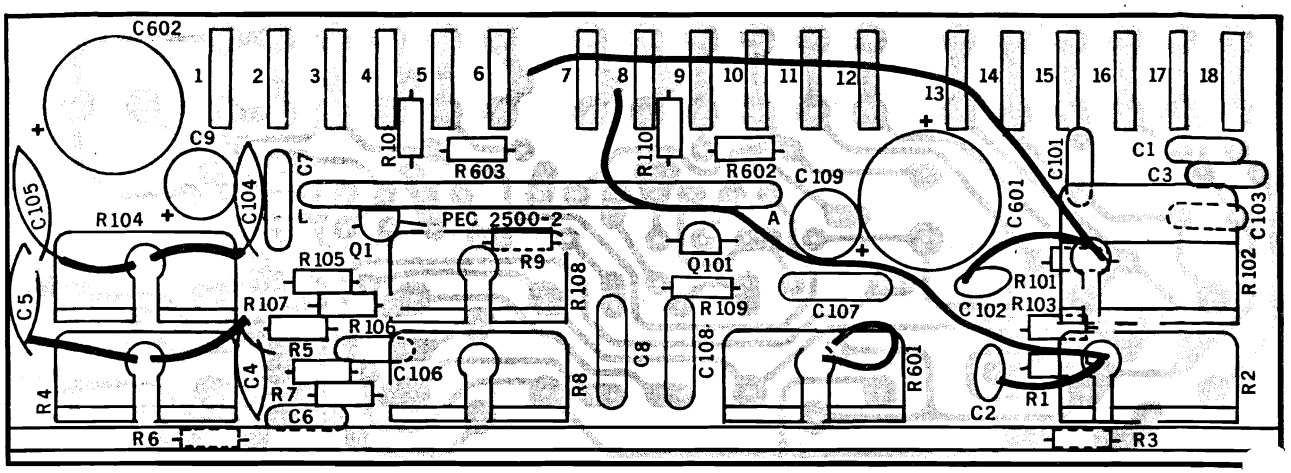




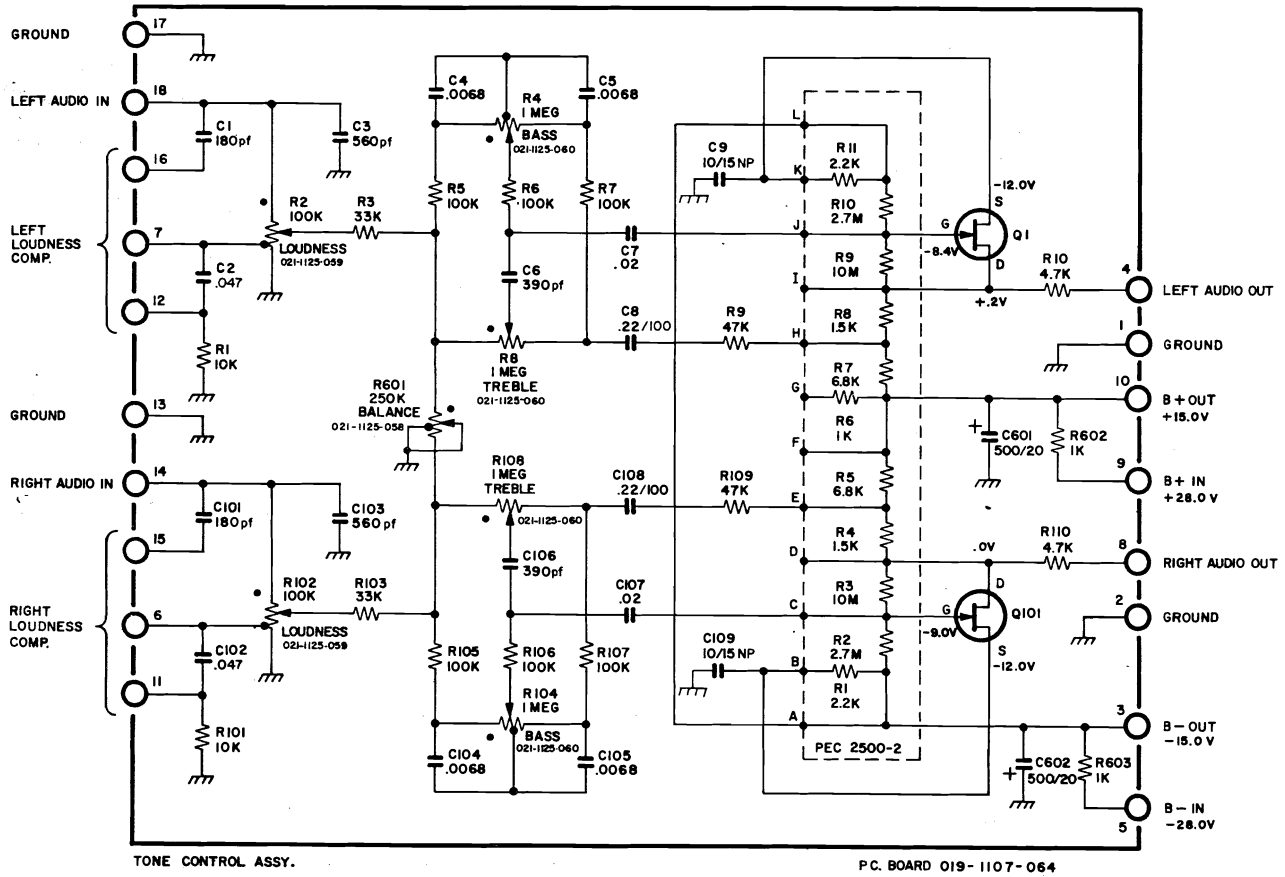
NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL RESISTANCE IN OHMS, ±10%, 1/4 WATT, CAPACITANCE IN MICROFARADS.
2. HIGHEST SERIES NUMBERS ARE: R7, R107, C5, C105, IC-601.
3. CIRCLE MARK ON TOP OR INDENTATION ON LEG OF IC INDICATES PIN NO.1.

Q1 , Q101 , 020-1112-005



TONE CONTROL & LOUDNESS



TONE CONTROL ASSY.

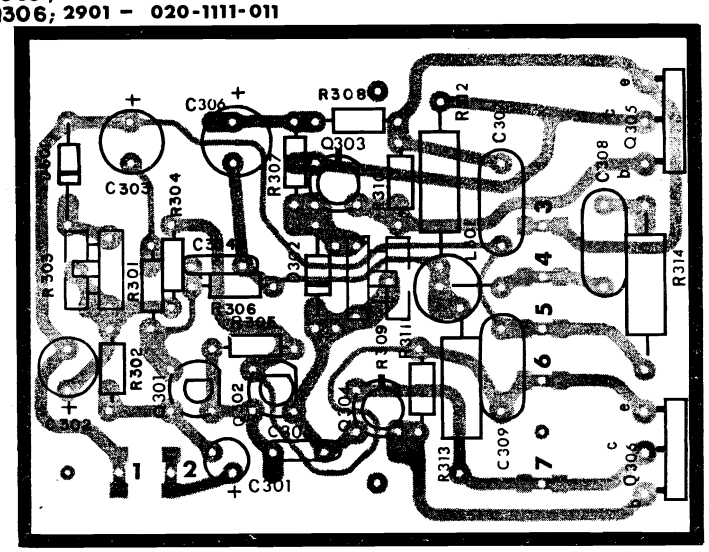
P.C. BOARD 019-1107-064

6. DOT ON POTENTIOMETER INDICATES EXTREME CW POTITION VIEWED FROM KNOB END

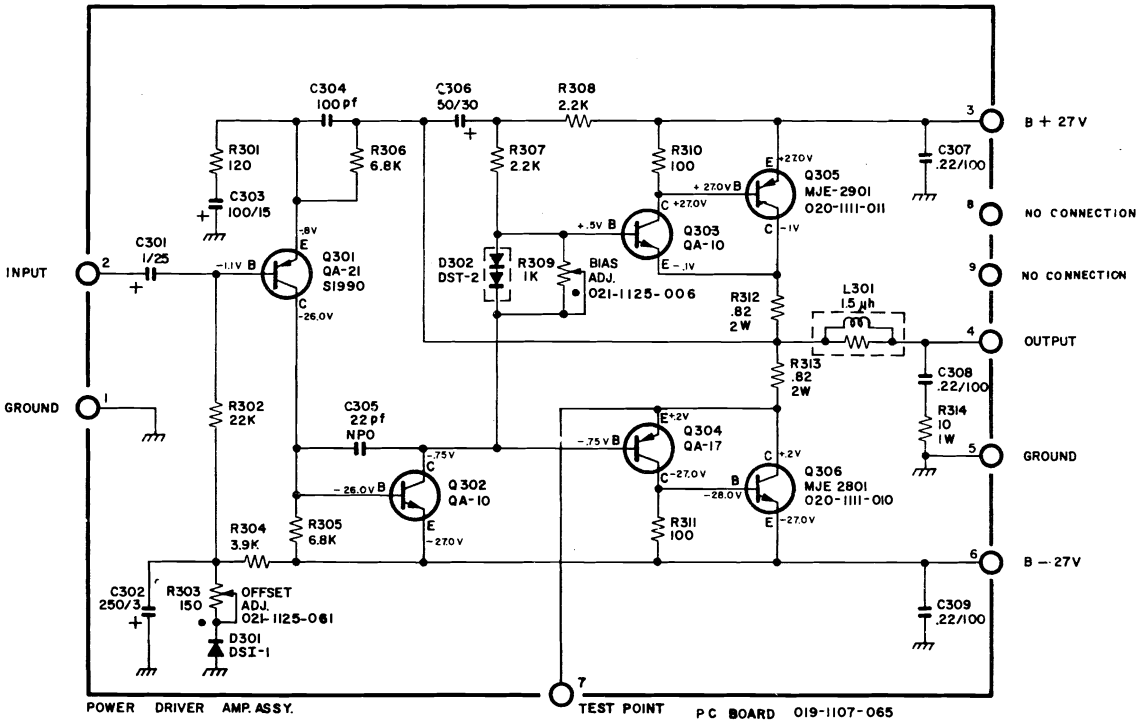
NOTES:
1. UNLESS OTHERWISE SPECIFIED: RESISTANCE IN OHMS ±10% 1/4 WATT, AND CAPACITANCE IN MFD'S.
2. Q1, Q101 ARE H.H.SCOTT #020-1112-005.
3. HIGHEST SERIES NO'S ARE: R10, R110, R603, C9, C109, C602, Q1, Q101
4. WHEN TONE CONTROLS ARE IN FLAT POSITION, THE OVERALL VOLTAGE GAIN OF THIS CIRCUIT IS APPROXIMATELY UNITY. (0db)
5. THE FOLLOWING CONTROLS IN THE LEFT CHANNEL ARE MECHANICALLY CLUTCHED WITH IDENTICAL CONTROLS IN THE RIGHT CHANNEL, LOUDNESS, BALANCE, TREBLE, BASS.

DRIVER

Q301 ; S1990
Q302 ; QA-10
Q303 ; QA-10
Q304 ; QA-17
Q305 ; 2801 – 020-1111-010
Q306; 2901 – 020-1111-011



POWER AMP. DRIVER



NOTES:

1. UNLESS OTHERWISE SPECIFIED - ALL RESISTANCE IN OHMS, ±10%, 1/4 WATT, CAPACITANCE IN MFD'S.
2. HIGHEST SERIES NUMBERS ARE: R314, C309, D302, Q306, L301
3. DOT ON POTENTIOMETER INDICATES EXTREME CW POSITION VIEWED FROM KNOB END.